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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,055	05/30/2001	Paul W. Meyer	13132.3USD1	7997

23552 7590 06/25/2003  
MERCHANT & GOULD PC  
P.O. BOX 2903  
MINNEAPOLIS, MN 55402-0903

EXAMINER
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THEISEN, MARY LYNN F

ART UNIT	PAPER NUMBER
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1732

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DATE MAILED: 06/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/870,055

Applicant(s)

MEYER, PAUL W.

Examiner

Mary Lynn F. Theisen

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 51-73 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 72 is/are allowed.
- 6) ☒ Claim(s) 51-60, 64-70 and 73 is/are rejected.
- 7) ☒ Claim(s) 61-63 and 71 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

***Claim Rejections - 35 USC § 103***

1. Claims 51-60, 64-70 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vogt (2,038,251) in view of Minnick et al (4,259,271).
2. Vogt discloses a process in which irregularly shaped particles are dropped into the upper portion of a drop tube so that they flow vertically downward, heated in the central portion of the drop tube to melt and allow surface tension shape the particles into spheres, and cooled in the lower portion of the drop tube. See Fig. 4. The particles are fed to the drop tube by vibration (column 3, lines 71-75). Vogt does not use coal fly ash or coal slag as the material for the particles, however, it would have been obvious to one of ordinary skill in the art to do so because these materials are expected to act in the same manner as those of Vogt since they are capable of being heated to melt and cooled to solidify as evidenced by Minnick et al. See In re Durden, 226 USPQ 359 (CAFC 1985). Vogt is silent as to the size of the irregular particles, however, the spherical particles are 0.001 to 0.5 mm (column 3, lines 20-25). Since the size of the particle in this type of process does not change very much it is assumed that the irregular particles are also in this size range and meet the limitations of present claims 52 and 53. The specific temperature would have been obvious to one of ordinary skill in the art based on the material used and its melting temperature. Minnick et al indicate that spherical particles of coal slag and fly ash can be used as abrasives (column 3,

Art Unit: 1732

lines 18-50). It would therefore be obvious to one of ordinary skill in the art to use them in processes requiring abrasives such as peening, polishing and sand blasting.

### ***Allowable Subject Matter***

3. Claims 61-63 and 71 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claim 72 is allowed.

5. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not suggest crushing the spherical particles or adding material to the slag or fly ash that will generate H<sub>2</sub>O, NO, NO<sub>2</sub>, SO<sub>3</sub>, CO<sub>2</sub> or mixtures thereof.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references are directed to spheroidizing.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Lynn F. Theisen whose telephone number is 703-308-2312. The examiner can normally be reached on Thursday and Friday 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 703-308-3853. The fax phone numbers for the organization where this application or proceeding is assigned are 703-

Art Unit: 1732

872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Mary Lynn F. Theisen  
Primary Examiner  
Art Unit 1732

mlt  
June 20, 2003